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March 29th.

MR. LEA, President, in the Chair.

Fifty members present.

The Report of the Proceedings of the Biological Department for the present month was read.

The paper read before the Biological Department, entitled "On Suppuration in Cancerous Growths, by J. J. Woodward, M. D.," was recommended for publication in a Medical Journal.

On report of the respective Committees the following were ordered to be printed in the Proceedings :

Observations on the Species of *Nicotiana*.

BY JOHN LE CONTE.

"Planta beata, decus terrarum, munus Olympi,  
Dissipat ignavum cerebro veterum,  
Ingenium illustrat, si quando aut multa tenebras  
Colligit ingluvies cerebro, aut molimine longo  
Intellectus hiat, rerum neque concipit umbras,  
Conceptasve tenet, vel cæca oblivio regnant,  
Ut semel irrepit blando lux indita fumo,  
Aufugiunt nubes atræ, curæque tenaces,  
Vis micat inventrix, dato velut obice veli  
Tota oculis animi patet, ampli machina mundi.

*Tapptus Orat. de Tabaco*

Among the extraordinary usages and customs which have been adopted by man, and which have become nearly universal, none is more so than the use of tobacco. That a plant, the first taste of which is so extremely nauseous, and the effects produced by it so highly disagreeable, should become over the whole habitable world an indispensable article of enjoyment, may well strike us with wonder. Other plants for their exciting or intoxicating properties have always been in use; for instance, the poppy, hemp and the *Amanita muscaria* but tobacco never produced these effects; rather the contrary, it soothes and indeed stupifies, when not taken in excess. When a sufficient quantity is taken to act with its full power on the animal economy, the feelings produced are most unqualifiedly disagreeable and annoying, nausea, vertigo, cold perspirations, palpitation of the heart, and a sensation which must be very much like the approach of death. Other narcotics, as opium and the extract of hemp, produce nothing but the most pleasing emotions. What then has induced man to adopt the use of this plant so opposite in its qualities? The answer is contained in the verses placed at the head of this paper, for the effects there described are truly what arise from the temperate use of tobacco. Whether the use of any species of this plant, or of others having similar properties, was known to the ancients, is a question hard to be resolved. All that I can collect on this subject follows: Herodotus (Klio, 202) says of the Skythi, that "they take the berries of a certain tree, kindle a fire, and assemble around it in parties, and then throw these berries on the fire, inhale the smoke, and intoxicate themselves with the smell, in the same manner the Greeks do with wine; the more fruit they throw on, the more intoxicated they get, until they rise up to dance and proceed to sing." He says they likewise purify themselves after a funeral in the following manner. "They make a close tent of felt blankets, with a vase filled with red hot stones placed in it. Then taking some hemp seed, creep in under the blankets and scatter it on the red hot stones, and produce such a vapor as no Grecian stove can. Delighted with the effect produced, they utter loud howlings; this stands them instead of a bath, for they never by any chance wash their bodies in water." In this respect they resemble our American Indians, and must have

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been as filthy in their habits. The women it appears removed the smell of the dirt, with which they were habitually covered, by the application of a perfumed paste. Solinus, cap. x. § 5, informs us that the Thrakes occasion a kind of ebrious excitement by burning the seeds of plants which they possess, and inhaling the smoke. Pomponius Mela, lib. ii. cap. ii. § 35, has very nearly the same words. Strabo, however, lib. vii. alluding to a similar custom, calls those who make use of this method of excitement *Καπνοβίται* or livers in smoke, or more properly as appears from other copies of his work, *Καπνοπάται* smoke walkers. The first three authors allude to the use of hemp; whether they did not put the dried leaves of this plant into pipes, as Strabo's men from the name he gives them probably did, we cannot now determine. It is certain that pipes have been found buried at great depths in the earth, where they could not have been placed within four hundred years. Dioscorides, in his treatise on *materia medica*, lib. iii. cap. 126, says, that the dried leaves of *Tusselāgo farfara*, set on fire and the smoke drawn through a tube (*infundibulum*) and received into the mouth, will cure those who are suffering under a dry cough or *orthopnœa*. Caius Plinius, lib. xxvi. cap. 16, recommends the same, and in the preceding chapter 15, the *Hyoscyamus niger*. Here are instances of smoking the leaves of plants, from tubes or pipes.

It is generally believed that tobacco was not known in Europe previously to the discovery of America. Yet one of the species known, and commonly cultivated in Europe and Asia, is never seen in this country except as a curiosity in botanic gardens. America was discovered in 1492. If the use of this herb was not known out of our country before this date, it is certainly inconceivable that in a few years after the time of Columbus, a little more than one hundred, the smoking, chewing and snuffing of tobacco should have spread through the habitable world, extended to the remotest districts of Africa, to India and to China, where nations are so averse to introduce any innovation in their customs. But when we come to consider that there is one species peculiar to Europe and Asia, another to Africa, and a third to America, I do not think that it will be difficult to suppose that it may have been in use in the remotest ages. Here follows all that I have been able to collect on this subject. None of the older travellers in thirteenth, fourteenth and fifteenth centuries, as Marco Polo, Pegolotto and Clavigo, in 1403, and the Portuguese voyagers, Vasco de Gama, Alvarez, Cabral and Pacheco, about 1500, mention having seen it used; Postel, Belon and Burbeck, Caspar Balby, John Newberry and Rauwolf, about a hundred years after, are equally silent with regard to the custom. Keeling is the first traveller whom I can find observing its use, this was in 1507. Kämpfer in 1560, and Isbrand Ides in 1692, say that its use was universal in China, both among men and women. In the year 1607, according to the observations of Mr. Fitch in his voyage to Sierra Leone, the negroes there cultivated tobacco, which he says appears to be half their food. According to Bosman in 1700, all the inland negroes used to cultivate tobacco, and from the description which he gives of the leaf, it appears to have been the same species as that formerly cultivated by the Spaniards in Cuba and South America.

Tobacco was first imported into France from Brazil, by Andrew Thevet, historian and Cosmographer to the king, in 1558. He says in his work, "*France Antarctique*," that the natives carefully gather the herb and dry it in the shade of their little cabins. The manner of using it is this; after drying it, they wrap a quantity of the herb in a very large palm leaf, and roll it to the size of a candle, then putting fire to one end receive the smoke of it by the nose and mouth. It is pretended that Raleigh introduced it into England in 1584, but this is not true. To John Nicot belongs the credit of having first actually introduced the use of it into France. It appears that he obtained the seed of it in Portugal, whither it was said to have been brought from Florida. John Nicot was an ambassador from France to the Portuguese court, during the reign of Charles the Ninth. When he sent the seed of this plant to France, he

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accompanied it with a small box of snuff, in the use of which Queen Catharine de Medici took such pleasure, that it soon became popular and fashionable. Thus much for its early history.

Tobacco, at all times, has had its detractors and its defenders; theologians and physicians have striven to eradicate its use, or to defend it as a perfectly harmless ingredient, in the pleasant employment of time. The number of publications for and against it has been truly enormous, but those who take the contrary part have been more distinguished by their extraordinary exaggerations and barefaced falsehoods, than by any just reasoning on the subject. It would be out of place here, to more than allude to the literary compositions of this nature, particularly those of an early date, at the head of which stands the *Misocapnus* of James the First, of England. Modern writers, even of our own times, are not wanting, who have not hesitated to invent the most flagrant falsehoods about the use of a substance, which, at the worst, involved only a small loss of time and of money. One has said that the decline of certain nations, the Chinese and Turks, must be attributed to the use of this plant. Others (calling themselves Doctors in Medicine,) have attributed almost every disease that afflicts humanity to this propensity. The great mortality attending Asiatic cholera has been ascribed to it. The enemies of alcohol, of tea and of coffee, all combine in a warfare against tobacco. They invent the most ridiculous stories to bring these articles into disrepute. Some have had the folly to say that leeches have been instantly killed when applied to those who used tobacco, and that bugs and fleas would not bite such persons. One Dr. Long, of New Hampshire, states that he was consulted by a Mrs. F., "on account of her daughter, who had a small ring-worm at the tip of her nose; she wished to apply tobacco to it." The Doctor objected, and related to her a story, probably of his own extemporary fabrication, of a father "who had destroyed his little son by the application of tobacco spittle to an eruption on his head." The good woman did not believe the doctor, and when he was gone besmeared the tip of her finger with some of the juice from the grandmother's pipe, and applied it to the ring-worm; the instant the mother's finger touched the part affected, "the eyes of the little girl rolled up in their sockets, she *sallied* back, and was prevented from falling by the alarmed mother." The child was then attacked by trismus and deep insensibility; she was, however, restored by the application of ammonia and lavender. "Till this time," says the Doctor, "the child had been robust and healthy, never having had but one illness that required medical advice, but since the tobacco experiment, has been continually feeble and sickly. The first four or five years after this terrible operation, she was subject to fainting fits every three or four weeks, lasting from twelve to twenty-four hours. Within the last three or four years these *turns* have been less severe."

In the first years of the introduction of tobacco into general use, laws were passed against it, chiefly, I presume, because it was looked upon as possessing intoxicating properties. Amurath, the IV., Sultan of Turkey, finding it impossible, himself, to learn to smoke, issued a violent decree against its use. Those convicted of being snuff-takers or smokers, were condemned to receive fifty blows of a cane on the soles of their feet, and on a repetition of the offence, to lose their noses. The same punishments for using tobacco were inflicted by Michael Féderowich, in Russia, which law was in force until the accession of Peter the Great. Tavernier relates that, Sefi, king of Persia, punished those who were caught smoking by pouring melted lead into their mouths until they were dead. Chardin tells us the following anecdote of King Abbas, the grandfather of Sefi:—Having tried without success to prevent the use of tobacco, the smoke of which was offensive to him, and in order to punish his courtiers who used it, at the end of a sumptuous banquet which he had given them, he offered them pipes filled with dry horse dung instead of tobacco. From time to time his majesty asked them how they liked the tobacco; they all declared that nothing could be more delicious; it possessed the perfume of a thousand  
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flowers. The king looking at them with indignation, exclaimed, Cursed be the drug which cannot be distinguished from horse dung.

The fanatics who first colonized New England, and who wished to make mere animated statues of their fellow creatures, could not resist the opportunity of putting a restraint upon this innocent enjoyment. They therefore ordered "that no man shall take any tobacco publicly in the street, highway, or in any barnyards, or upon training days, or in any open places," under the penalty of sixpence for each offence. I might fill pages with similar relations, and with accounts of attacks made upon this favorite weed, but I forbear.

I have used tobacco for more than sixty years without perceiving any ill effects produced by it. I was once induced to abandon it for about six months, but this disuse brought on numerous and painful ulcers of the tongue, which promptly vanished on resuming its use.

I have never observed it to have any exciting effects on the body or mind, but on the contrary, its action appears to be entirely soothing and sedative. Let a person overwhelmed with fatigue of body and mind set himself down in an easy posture, light his segar or pipe, and cease to think; by the time his *fumate* is burnt out, he will find himself entirely relieved from his fatigue, with mind refreshed, and body strengthened. Drs. Pereira and Christison, say they have never known any well ascertained ill effects having been produced by the habitual practice of smoking.

The great variety of tobacco met with in commerce, differing in color, in flavor, and in strength, does not depend upon a difference in species or variety, but almost entirely on the soil in which it has grown, in the method of curing it, and the adulterations which it undergoes in passing through the hands of unscrupulous dealers. Thus manured land never produces the plant of the first quality; for this purpose, a virgin soil, very rich and strong, with but little calcareous matter is required. This, however, will not endure for a longer space than six years: it gradually deteriorates, until at last it is entirely worn out, and cannot be brought back to its original state by the application of manure. This always renders it disagreeably strong, and highly impregnated with nitre. Calcareous soils produce these same effects, and thus the tobacco of our Western States is inferior to the Virginian, and may easily be known by a saline taste. If tobacco be cured without the use of artificial heat, its fine flavor is better preserved, and its color more uniform. Again, if dried with little exposure to the air, it becomes of a bright yellow color. The best tobacco for smoking comes to us from the tropics, possessed of a peculiar flavor and perfume; this was once the case with all the segars brought from Cuba. At present, those that are introduced into the United States from that island are adulterated with tobacco of an inferior kind; they are not at all like those brought fifty years ago. Either the plant has deteriorated by mixing with other species, or is so adulterated by a mixture with the common tobacco of our country, that the true flavor is entirely lost. Vessels loaded with tobacco, the produce of our own soil, are constantly leaving our shores for the port of Havanna. Besides, large quantities of an inferior quality produced from imported seed are now sent from New England, and either used there or brought back and sold here as genuine Havanna. The last good tobacco that I have smoked was made by myself in Georgia, about thirty years ago. This possessed the delightful perfume peculiar to the best raised within the tropics; it was at the same time very mild and burnt freely. There is, however, much imagination in the judgment which we form of tobacco.

I might here point out the method by which deleterious substances are mixed with tobacco, and how the leaves of various other plants are substituted for it. Some of the most extensively used manufactured tobacco has poisonous drugs mixed with it, which increase its action on the system, particularly on the brain, in such a degree as to become really dangerous. Those persons, therefore, who use it for a masticatory, would do well to employ no other than the pure leaves

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as they are brought from Virginia. Almost all the pressed tobacco is defiled with liquorice or molasses, which substances conceal the bad taste of the inferior qualities. The method by which the flavor of our plant is imparted to plants which have none of their own is as follows:—A quantity of the refuse tobacco is boiled in wine, or more frequently in human urine, until a strong fluid extract is obtained; to this some salt is added. It is then poured upon the dried leaves of other plants, such as rhubarb, burdock, sunflower, cabbage, or broad-leaved dock, which, after remaining in the fluid a sufficient time to absorb as much of it as they can contain, are hung up to dry and then made into Havanna segars. Cut tobacco, likewise intended for smoking, is mixed with the leaves of stramonium and foxglove and with opium. There is, however, no end to the dishonesties practised by tobacco manufacturers.

I now proceed to describe the plant as it has come under my observation, premising that I do not believe that the species here noted are any where to be found in a perfectly wild or native state. Mr. Lehman, the last authority on this subject, enumerates twenty-one species. I have seen but four, and one of these looks very much like some other genus. I allude to *N. quadrivalvis*. The other species of *Nicotiana* have but two valves in the capsules. The three remaining species, I know from experience, mutually mix together. I omit a description of the genus.

**NICOTIANA TABACUM.** Annual, viscid, branching. Leaves oblong lanceolate, broad, acuminate, most entire, for the most part strictly sessile, at the base more or less decurrent, subamplexicaul. Flowers paniculately corymbose, terminal, with linear lanceolate bractes. Calyx oblong, five-cleft, the divisions lanceolate acute. Corolla infundibuliform, much longer than the calyx, the tube viscid, greenish, the limb pale rosy, spreading, the lobes ovate acute, capsule a little longer than the calyx, stigma transversely sulcate on the top.

This is the common tobacco of commerce, called by different names, Virginian, Kentucky, Nagadoches, &c. It is not agreeable to smoke, unless weakened by washing in water. It is the only kind fit for chewing. Too much care cannot be taken in the operation of curing it, and much of its goodness depends upon the manner in which it has been dried and fermented. The Indians in this country are in the habit of mixing it with the leaves of *Rhus glabrum* and *Laurus Borbonia*, or the scraped bark of *Cornus sanguinea*, all of which improve its taste in a remarkable degree.

**N. FRUTICOSA.** Perennial, pubescent, viscid, branching. Leaves lanceolate, acuminate, most entire, sometimes very shortly petiolate, most generally sessile, the lower ones amplexicaul. The inflorescence the same as of the preceding, stigma subbilobate.

This is the far-famed tobacco of the Island of Cuba and of all the tropical parts of America. I have been told that it is the species cultivated in the interior of Africa. It is probably indigenous to that portion of the globe. An African, from a region in that country far distant from the sea, who was well acquainted with the cultivation of the plant in his own country as well as in this, told me when he first saw this species growing in Georgia, that it was the kind which grew in his country. He could not well be mistaken, for the leaves of *N. tabacum* are very wide, whilst on the contrary of the *N. fruticosa* they are rather narrow. It is from this species that the so-called Havanna segars ought to be made. But it seems to me that very little of it enters into the composition of what we now receive from Cuba.

**N. RUSTICA.** Annual, villous, viscid, branching. Leaves petiolate, ovate or roundish obtuse most entire, sometimes more or less cordate, divisions of the calyx short, ovate or roundish. Corolla greenish yellow. Stigma entire.

From this species, which is nearly as agreeable for smoking as the last, are produced the varieties called Turkish, Chinese, East Indian, Shirazian and Latakia tobacco. It is said to have been imported from America into England 1859.]

in the year 1578, and yet has never been seen here except cultivated as a curiosity in gardens, the seed being always brought from China. It must be considered as a species confined originally to the older continents and not known on this side of the Atlantic, until after the discoveries of Columbus and others. I think that I have seen it growing in a quasi indigenous state on the road sides in Europe. No tobacco has ever been seen growing without cultivation in the United States. This circumstance taking place with most of our cultivated vegetables is a certain proof of their having been imported from some other country.

As has been observed before, these three species will mix together in every possible degree, hence the great number of species which appear in our books. If we take the trouble to analyse these, it can easily be perceived that they have been produced by hybrid intermixtures, unless fertile hybrids are to be considered as valid species. All those which resemble the *N. tabacum*, but with narrower leaves than common, or in any degree possessed of the peculiar characteristics of the *N. fruticosa*, have been produced by the mixture with this species, and all those with leaves more or less petiolate, whether lanceolate or ovate, as formed by a combination of *N. tabacum*, *N. fruticosa* and *N. rustica*. It is remarkable what strange appearances these will put on; every possible variation of the principal forms and every gradation of position will be found, all, however, easily reducible to the three original types.

**Notes on COLUBER CALLIGASTER of Say, and a description of new species of Serpents in the collection of the North Western University of Evanston, Ill.\***

BY R. KENNICOTT.

EUTÆNIA SACKENII Kennicott.

*Sp. ch.*—Very slender; tail forming one third of the total length. Crown more elevated and convex anteriorly than in *E. saurita*. Nineteen dorsal rows of scales. Color olive black above, not lighter below the lateral stripe. Lateral stripe greenish yellow, very narrow on the third and fourth lateral rows. No dorsal stripe. Abdomen uniform greenish.

In form, this closely resembles *E. saurita*, but is at once distinguished by the absence of the dorsal stripe, of which there is no trace, except for about a half inch behind the head. The color of the upper parts is also much darker, and the first two rows of scales below the dorsal stripe are not lighter than above it. Florida.—Baron Osten Sacken.

SCOTOPHIS CALLIGASTER.

*Coluber calligaster* Say, in Long's Exped.

*Sp. ch.*—Head very narrow, elongated, much wider behind; nose very obtuse, the whole outline subquadrangular; much elevated anteriorly, as high as wide before the eyes, flattened and rather depressed on the occiput. Eye large. Vertical plate narrow, much longer than wide, tapering but little behind. Superciliaries very narrow. Postfrontals and loreal large. Twenty-seven dorsal rows of scales, only the central carinated, and these very faintly. Ground color olivaceous white; a dorsal series of transverse brown blotches separated by narrower intervals than in *S. Emoryi*, B. & G., with two smaller series on each side. Temporal light stripe, narrower than in *S. Emoryi*. A brown blotch under the eye, and another on the second and third upper labials. Labials not margined with black.

This is very closely allied to *S. Emoryi*, from which it differs in having the head narrower posteriorly, with a more obtuse snout, smaller vertical, narrower

\* Specimens of these species are also in the Museum of the Smithsonian Institution, Washington.

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superciliaries, larger loreal, narrower intervals between the dorsal blotches, which are themselves less rounded, narrower light temporal stripe, etc. From *S. guttatus*, it may be readily distinguished by the color, transverse dorsal blotches, etc.; and from the other species of the genus it differs in much the same points with *S. Emoryi*. There can be no hesitation in referring this species to the *Coluber calligaster* of Say. The very faint carinations of the central dorsal scales might easily be overlooked. Like *S. Emoryi*, it bears a strong general resemblance to *Ophibolus eximius*, to which species Say's description has been referred by Dr. Holbrook, and others; but from this and *O. Evansii*, it may at once be distinguished by the large eye, elongated head, divided postabdominal scutella, carinated scales, and other generic characters.

Hyatt, Anderson Co., Kansas, Mr. Samuel Arny.

#### OPHIBOLUS EVANSII Kennicott.

*Ophibolus Evansii* Kennicott, Rep. of Mex. Boundary Survey.

*Sp. ch.*—Light olivaceous brown or gray, with a dorsal series of about sixty subquadrangular emarginate dark chestnut brown blotches from head to tip of tail, and two smaller lateral series on each side. Dorsal scales in twenty-five rows.

This is most nearly allied to *O. eximius*, but differs strikingly in the number of dorsal rows of scales,—twenty-five instead of twenty-one; also in having a more elongated, narrow and elevated head, narrower snout, anterior and posterior emarginations in the dorsal blotches, etc.

Prairies of Central Illinois, S. H. Roots, C. Mills, S. W. Arnold.

The species is dedicated to Prof. J. Evans, to whose interest in the investigation of the zoology of the north west, the N. W. University is principally indebted for the large collections of animals made under its auspices.

#### DIADOPHIS ARNYI Kennicott.

*Sp. ch.*—Form slender, though less so than in *D. docilis*. Body above uniform leaden black, the crown scarcely darker; abdomen yellow, thickly and irregularly spotted with black, the spots more numerous than in *D. docilis*, and extending to some distance behind the anus; head beneath thickly mottled with black spots of much smaller size than those on the abdomen. A narrow light yellow occipital ring, one to one and a half scales wide. Dorsal scales in seventeen rows.

Resembles *D. docilis*, from which it will be distinguished by the color, shorter body, narrower head, spots under the tail, and narrower occipital ring; from *D. regalis* by its occipital ring, and from the other species by the number of dorsal rows.

Hyatt, Anderson Co., Kansas.—Samuel Arny.

#### VIRGINIA ELEGANS Kennicott.

*Sp. ch.*—Resembles *V. valeriae*; vertical and occipital plates narrower. Dorsal scales very narrow and elongated, much more so than in *V. valeriae*, disposed in 17 rows. Color uniform light olivaceous brown above; dull yellowish-white beneath.

Readily distinguished from the nearly allied *V. valeriae* by the narrower dorsal scales in 17 rows instead of 15 as in that species.

Heavily timbered regions of southern Illinois.—Dr. Hugh McVean, J. W. Waugh.

#### CELUTA VERMIS Kennicott.

*Sp. ch.*—Larger than *C. amœna* and *C. Helena*. Two pairs of frontal plates. Color above lustrous purplish black, much darker than in *C. amœna*. Abdomen pale yellowish flesh color, (probably brighter in life); this color extending to the third lateral row of dorsal scales.

Though possessing the general form of *C. amœna*, this differs strikingly in the 1859.]



larger size, darker color of the upper parts, and the extension of the flesh color of the abdomen over to the third lateral row of scales; in *C. amœna* this color extends only to the second row.

Missouri,—Dr. P. R. Hoy.

CELUTA HELENÆ Kennicott.

*Sp. ch.*—Snout shorter and narrower than in *C. amœna*. A single pair of frontal plates. Color above lustrous chestnut brown; beneath pale yellowish, (flesh color in life) color of the abdomen extending to second lateral row of dorsal scales.

Readily distinguishable by the suppression of the anterior frontals.

Monticello, Miss., Miss Helen Teunison; Southern Illinois (abundant in the woods), Dr. H. McVean, Robt. Gow, C. Thomas, L. W. Ashley.

### ICHTHYOLOGICAL NOTICES.

BY CHARLES GIRARD, M. D.

XXVIII. The genus *Hadropterus* is represented in the waters of the Potomac River by a species, the average size of which is three inches in total length. Its body is subfusiform, compressed, thickest anteriorly and tapering gradually towards the peduncle of the tail, which is slightly contracted. The head enters four times and a half in the total length. The posterior extremity of the maxillar bone corresponds to a vertical line intersecting the anterior rim of the orbit. The eye is subcircular and well developed; its diameter entering about four times in the length of the side of the head; once in advance of its anterior rim. The first dorsal fin is lower and much longer than the second, to which it is contiguous. The posterior margin of the caudal fin is subcrescentic. The anal fin is situated exactly opposite the second dorsal and corresponds to it in extent, but differs from it by its external margin, which is more convex, giving the entire fin a more ovate outline. The ventrals and the pectorals are moderate sized, the former being subanceolar, the latter subelliptical in their outline. The rays are:—D xiv; 14; A ii, 10; C 6, 1, 8, 8, 1, 5; V i, 5; P 14.—The scales are small, longer than deep and very finely pectinated upon their posterior margin. The lateral line constitutes the eighth row of scales, counted from the first dorsal fin. The ground color is yellowish brown; the dorsal region being maculated with chestnut brown; whilst a series of rather large, rounded, blackish blotches occupy the middle of the flanks; a black vertical streak intersects the orbit. The second dorsal and the caudal fins are transversely barred with blackish. The other fins are unicolor, except the first dorsal, which exhibits small black spots close to the rays, below the middle of their height, more conspicuous anteriorly than posteriorly.

The species here referred to we will record under the name of *H. maculatus*; the specimens examined were caught in an eastern tributary of the Potomac River, in Anne Arundel Co. Md.

XXIX. Another species of *Hadropterus* was collected in the Arkansas River, near Fort Smith, by Dr. George G. Shumard. We propose to call it *H. shumardi*. It will always be easy to distinguish it from its congeners by the great development of the anal fin, which is much larger than the second dorsal and projects much further back. The body is elongated, rather slender, although tapering but little backwards; its entire length is about two inches and a quarter, in which the head enters four times and a half. The first dorsal fin is longer than the second and nearly as high.—D xi; 13; A ii, 11; C 6, 1, 8, 7, 1, 5; V i, 5; P 12.—The scales are rather small. The color is somewhat altered by the preserving fluid: an olivaceous tint appears to have existed over the dorsal region with darker spots or dots, whilst the abdominal region is rather whitish. The caudal fin exhibits transverse dark lines, and the first dorsal a black spot at its posterior portion; a dark vertical streak intersects also the orbit.

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XXX. A representative of the Etheostomid family was procured by the U. S. and Mexican Boundary Commission, at the mouth of the Rio Grande del Norte (Rio Bravo). It constitutes a new generic type, allied to *Catnotus*, and to which we have applied the name of *Alvarius*, with the following characters: Head elongated and tapering; mouth terminal, large, not protractile, lower jaw longer than the upper. Teeth very minute, opercular apparatus, cheeks, and throat scaly. First dorsal fin nearly equal in height to the second, from which it is quite distinct. Anal fin much smaller than the second dorsal; caudal fin truncated. Five soft rays to the ventrals. Ventral scales uniform.

As to the species, its body is slender and elongated, the head being subconical and tapering forwards. The latter enters four times and a half in the total length. The eye is subelliptical; its horizontal diameter entering about four times in the length of the side of the head; once in advance of its anterior rim. The posterior extremity of the maxillary bone corresponds to a vertical line drawn in advance of the pupil. The first dorsal fin is subtriangular in its outline; its base is nearly equal to that of the second dorsal, from which it is separated by a small space. The anterior margin of the anal is situated somewhat behind the origin of the second dorsal; both fins terminating evenly. The ventrals and the pectorals are rather slender.—D vi; 10; A 8; C 5, 1, 6, 6, 1, 6; V 5; P 14.—The scales are very small, finely pectinated posteriorly; the lateral line being median. The ground color is light yellowish brown; the dorsal region being occasionally maculated, and the middle of the flanks provided with a narrow blackish streak which extends along the sides of the head to the apex of the snout. This lateral streak has suggested the appellation of *A. lateralis*, which we have bestowed upon this species. The fins are unicolor, except the caudal, which is transversally barred, and the first dorsal which exhibits a black spot at its upper and posterior edge. The largest specimens examined measure somewhat less than two inches in total length.

XXXI. A mere glimpse at the "*Ichthyologia ohioensis*" is sufficient to convince every impartial writer, that *Etheostoma blennioides* was never intended to typify the genus *Etheostoma*.\* The latter is subdivided into two subgenera: *Aplesion*, in which the spinous and the soft portions of the dorsal fin are combined; and *Diplesion*, in which the same parts are distinctly separated. Now, *E. blennioides* falls immediately under the head of *Diplesion*.

Another species of the genus *Diplesion* inhabits the waters of Chihuahua river. Specimens of it were collected by Mr. John Potts, of Chihuahua, and sent to the Museum of the Smithsonian Institution. We call it *D. fasciatus*.

It has the same general blennioid aspect as its congener: the total length of the specimens observed, measuring about two inches and a quarter, the head entering in it four times and a half. The eye is of medium size, subcircular; its diameter being contained four times in the length of the side of the head. The first dorsal fin is lower and longer than the second, to which it is contiguous. The anal is well developed, rather deeper than the second dorsal, but shorter upon its base. The caudal fin is subtruncated. The ventrals and the pectorals are of moderate development; their tips being nearly even. The rays are;—D x; 12; A 1, 8; C 6, 1, 6, 6, 1, 6; V 1, 5; P 11.—The scales are small, deeper than long, posteriorly rounded off and minutely pectinated, whilst their anterior margin is truncated, exhibiting numerous radiating furrows upon the latter section only. Their imbrication takes place after the fashion of the sciæniids: instead of longitudinal series, they constitute transverse, oblique series. As to the coloration it is but imperfectly preserved. Transverse bands of deep chestnut brown alternate with white or yellowish ones. These bands, or fasciæ, are better defined below the lateral line than above it, where they are sometimes interrupted. The head is brown, with a vertical black streak across

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\* Amer. Journ. of Sci. and Arts. Second series. xvii. 1854, 305.

the orbits. The fins are yellowish, unicolor, except the first dorsal, which is margined with black. During life we imagine this fish to be one of the prettiest inhabitants of the fresh waters of this continent.

XXXII. To such species of the genus *Eltheostoma*, in which the two dorsal fins are united, Rafinesque proposes to apply the name of *Aplesion*, as alluded to above. A species of the latter genus was collected with the preceding one by Mr. John Potts, in Chihuahua river and tributaries. Its body is rather short and deep, proportionally deeper than in the other genera of the family. The dorsal region is regularly convex from the occiput to the peduncle of the tail. The caudal fin is rounded off and fan-shaped. The spinous portion of the dorsal fin is nearly of the same height as the soft portion, but much longer and superiorly convex. The anal fin is smaller than the second dorsal. The ventrals are subanceolated and the pectorals subelliptical in shape, rather small or moderate in development, the tip of the ventrals projecting somewhat further back than that of the pectorals, although not reaching the vent. The formula of the fins is as follows:—D x, 1, 10; A ii, 7; C 4, 1, 6, 6, 1, 3; V i, 5; P 11.—The head, which forms about the fourth of the total length, is rounded upon the snout; the jaws being nearly equal, the gape of the mouth somewhat oblique, the posterior extremity of the maxillar bone extending to a vertical line which would intersect the pupil. The eye is circular; its diameter entering four times in the length of the side of the head, less than once in advance of its anterior rim. The opercular apparatus, cheeks and throat are bare. The scales are of moderate development deeper than long, very finely pectinated posteriorly, where rounded off, and provided with radiating furrows upon their anterior section. The color is of a uniform olivaceous brown tint, the dorsal fin rather darker than the rest. We propose to call this species *Aplesion potsii*, in remembrance of our esteemed friend from Chihuahua.

XXXIII. A species of *Oligocephalus*, closely allied to *O. lepidus* was collected in Devil's river, Texas, by John H. Clark, under Col. J. D. Graham. It may be distinguished from its congener just alluded to by a much larger anterior dorsal. The latter is nearly as high as the second dorsal and somewhat longer upon its base. The body is rather short and quite compressed; about two inches in total length, in which the head enters four times and a half. The tips of the ventrals are nearly even with those of the pectorals. The rays of the fins are:—D ix; 13; A ii, 8; C 4, 1, 7, 6, 1, 3; V i, 5; P 12.—The scales are proportionally well developed; the nape is bare. The ground color is yellowish brown, with blackish brown blotches more distinct along the dorsal line than on the flanks. The second dorsal and caudal are transversely barred. The species we will record under the name of *Oligocephalus grahami*.

XXXIV. Another species still, of the same genus *Oligocephalus*, was collected in the Rio Leona, Texas, by the same party that secured the preceding one. We will designate it under the appellation of *O. leonensis*. It is a more slender fish than either *O. lepidus* or *O. grahami*, although not quite so elongated as *O. linslii*. The largest specimens observed measure about two inches in total length, in which the head enters four times and a half. The anterior dorsal fin is longer but somewhat lower than the second dorsal, and superiorly convex. The anal is well developed. The ventrals are small and spear-shaped, as well as the pectorals when in a semi-closed condition. The tips of the latter extend beyond those of the former, although very far from reaching the vent. The formula of the fins is as follows:—D ix; 10; A ii, 7; C 6, 1, 6, 6, 1, 5; V i, 5; P 12.—The ground color is yellowish olive, maculated with black or brown. Second dorsal fin and caudal transversally barred.

XXXV. We have bestowed the name of *Oligocephalus pulchellus* upon a species collected in a tributary of Gypsum creek, which empties itself into the Canadian river, by the party under Lieut A. W. Whipple, while exploring the R. R. route along the 35th parallel. The only specimen preserved measures an inch

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and a quarter, and in all probabilities not fully grown. The body is slender and subfusiform, quite compressed, deepest at the insertion of the ventrals, and tapering towards the base of the caudal. The head is slender, subconical, and rounded off anteriorly. The anterior undivided ray of the anal fin is quite large, and a good deal more conspicuous than the second one. There are but six articulated rays to that fin. The ground color is yellowish brown, maculated with black or blackish brown.

XXXVI. Specimens of a species of *Boleosoma* were collected by Dr. C. B. Kennery, under Lieut. A. W. Whipple, in the Rio Seco, Texas, and in the Rio Leona, near Fort Inge, Texas. It is slender and graceful in general appearance, measuring an inch and three quarters in total length, in which the head enters about four times and a half. The first dorsal fin is longer and lower than the second, and superiorly convex. The anal is much deeper than long upon its base, and convex upon its edge. The tips of the ventral fins extend a little further back than those of the pectorals. The rays are as follows:—D x; 10; A 8; C 3, 1, 7, 7, 1, 3; V 1, 5; P 13.—The ground color is olivaceous yellow, maculated with black or blackish brown. The second dorsal and the caudal fins being as usual transversally barred. A longitudinal black streak may be observed in advance of the orbits, and a vertical one beneath them. We call the species *Boleosoma gracile*.

XXXVII. Under the name of *Boleichthys* we have instituted a genus which is intermediate between *Boleosoma* and *Oligocephalus*. The head is subconical, tapering forwards, the jaws being nearly equal, hence the mouth is terminal, slightly protractile, and of moderate size. The opercular apparatus is scaly, whilst the cheeks and the throat are bare. The two dorsal fins are distinctly separated; the first being lower than the second. The anal is well developed, although somewhat smaller than the second dorsal. The caudal is subtruncate or subrescenscentic.

The typical species of this genus was collected by Dr. Geo. Suckley, under Gov. I. I. Stevens, in Little Muddy river, a tributary of the Upper Missouri. It is a very slender fish, measuring an inch and three quarters in total length. The body is compressed, tapering towards the peduncle of the tail, which is slightly contracted. The head constitutes a little less than the fourth of the total length. The eye is large and subcircular, its diameter entering three times and a half in the length of the side of the head. The posterior extremity of the maxillar bone extends to a vertical line which would intersect the anterior rim of the pupil. The formula of the fins is as follows:—D x; 10; A 11, 8; C 3, 1, 6, 6, 1, 3; V 1, 5; P 12.—The lateral line, from the orbit passes over the opercular apparatus, keeping nearer the dorsal than the abdominal line to the peduncle of the tail, hence midway to the insertion of the caudal, when it does not disappear before reaching it. The pectorals extend further back than the ventrals; the first dorsal is convex. The ground color is yellowish brown, maculated with greyish black. The dorsals and the caudal fin are transversally barred. A dark spot may be seen on the occipital region, and a streak in advance as well as beneath the orbit. We call the species *Boleichthys exilis*, on account of its slender appearance.

XXXVIII. A second species of *Boleichthys*, which we call *B. whipplei*, was collected in Coal creek, Arkansas, by the party under Lieut. A. W. Whipple. Its body is more compressed and proportionally deeper than in the foregoing species. The head constitutes a little less than the fourth of the total length, which is nearly two inches. The first dorsal fin is convex in its outline. The ventrals extend further back than the pectorals. The rays of the fins are:—D 11; 13; A 11, 8; C 2, 1, 8, 7, 1, 3; V 1, 5; P 12.—The scales are rather small, smaller than in the preceding species, and the lateral line is but slightly nearer the dorsal than the ventral line. The ground color is reddish brown, inconspicuously maculated; a black spot may be observed at the scapular region. The second dorsal and the caudal fins are transversally barred.

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XXXIX. Specimens of a rather short and deep bodied species of *Boleichthys* were collected at Piedrapainte, Texas, by John H. Clark, under Col. J. D. Graham, while connected with the U. S. and Mexican Boundary Survey. We call it *B. elegans*. The first dorsal fin is longer than the second, and the pectorals extend further back than the ventrals. The formula of the fins is as follows:—D x; 12; A ii, 8; C 2, 1, 7, 6, 1, 3; V i, 5; P 12.—The scales are of medium size, and larger than in the preceding two species. The ground color is olivaceous brown, maculated with blackish brown.

XL. In the collections made during the "Exploration of the Upper Missouri and Yellowstone," under Lieut. G. K. Warren, there is a species of *Boleichthys* resembling more *B. exilis* than any other of its congeners, by the shape of its body and general appearance. It differs, however, from the species just alluded to, by a more compact body, a proportionally shorter head, smaller scales, and the structure of the fins, the rays of which are as follows:—D ix; 11; A ii, 9; C 3, 1, 8, 7, 1, 4; V i 5; P 13.—The ground color is yellowish brown, the middle of the flanks being maculated with transverse spots of blackish; the belly exhibiting a rather orange hue. The first dorsal has a series of vertically elongated black spots resembling a dark band across the middle of that fin. The second dorsal and caudal are transversally multilined. A black streak may be seen in advance to the orbit, and another beneath it. A specimen two inches long was collected by Dr. Hayden, in Cannon Ball river, in September, 1856. We propose calling the species *B. warreni*.

**Catalogue of the Birds of New Mexico as compiled from Notes and Observations made while in that Territory, during a residence of six years.**

By T. CHARLTON HENRY, M. D.

Assistant Surgeon U. S. A.

The following catalogue is intended to serve the purpose of a second edition of "Notes derived from Observations made on the Birds of New Mexico, during the years 1853 and 1854," published in the Proceedings of the Academy in April, 1855.

A residence in the same territory four additional years, has enabled the writer to extend his observations very considerably, and to add much to the varieties heretofore enumerated.

It will be observed that the nomenclature has been completely modified, in accordance with the extended number of sub-families and sub-genera, which modern science has very generally adopted.

A few of the species heretofore supposed to belong to certain sub-genera, have, upon more minute inspection, proved to present variations somewhat different from those which then appeared to determine their proper classification, and have been designated accordingly.

1. CATHARTES AURA.
2. FALCO NIGRICEPS. Of this species I never was able to obtain but one individual, nor am I aware of ever observing others of like character. Met with among the mountains in the vicinity of Fort Stanton.
3. GENNAIA POLYAGRUS. Never more than three or four met with, of which two were procured.
4. FALCO SPARVERIUS. Common everywhere.
5. ACCIPITER MEXICANUS. Rarely met with.
6. ACCIPITER COOPERI. Observed about as frequently only as the above.
7. BUTEO CALURUS. A rare species, never more than eight or ten observed during six years residence in the territory. Of these I was successful in procuring four only. This is a remarkably shy and wary bird and exceedingly

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difficult of approach. I have always observed them solitary and during the coldest portion of the winter along the shores of the Rio Grande. Never observed in the mountains either on the Rio Mimbres or Gila to the west, or the Sierra Blanca and Rio Ruidosa to the east and northward. This hawk appears to feed principally upon ducks as far as I have observed, which has been only during the winter season.

8. *LEUCOPTERNIS HARLANI*. I have met with this bird on four occasions only, once at the Big Bend of the Arkansaw river, Indian Territory, in May, 1852, and on three different occasions on the Gila river, in the summer of 1857. I was induced to believe that it breeds high up on this stream, from having observed pairs each time when seen on the Gila.

9. *POECILOPTERNIS BOREALIS*. Some of the specimens supposed to be of this species that were obtained are probably *P. montanus*.

10. *P. LINNÆATUS*. One specimen only obtained, the only one seen at Fort Thorn, in the winter of '56-'57.

11. *P. OXYPTERUS*. This hawk I met with and procured on one occasion only, on the Mimbres river, in the winter of '52-'53.

12. *ARCHIBUTEO FERRUGINEUS*. Met with but once, in the winter of '56-'57, on the Rio Grande, near Fort Thorn, where I procured a specimen.

13. *ARCHIBUTEO LAGOPUS*. Common in winter.

14. *CIRCUS HUDSONIUS*.

15. *AQUILA CANADENSIS*. Two only met with, one at the Rio Mimbres in the winter of 1853, the other at Fort Stanton on the Rio Bonita in the spring of '55, both individuals secured. The latter was found fastened to a skunk (*M. Americana*) alive, but apparently overpowered by the effluvia given out by the animal.

16. *HALLÆTUS LEUCOCEPHALUS*.

17. *PANDION HALLÆTUS*. Rather rare.

18. *POLYBORUS THARUS*. But one individual ever met with, in the winter of '56 at Fort Thorn on the Rio Grande, during the coldest portion of the season.

19. *BUBO VIRGINIANUS*.

20. *OTUS WILSONIANUS*. Found, but not abundantly, in all portions of the territory.

21. *BRACHYOTUS CASSINI*. Rarer than the preceding.

22. *ATHENE HYPUGEA*. 23. *GEOCOCCYX CALIFORNIANUS*.

24. *COCCYZUS AMERICANUS*. Rarely observed, and at no time among the mountains.

25. *TRICHOPICUS HARRISII*. A common species in every part of the territory.

26. *DYCTIOPICUS SCALARIS*. Quite abundant, especially along the mesquite thickets on the Rio Grande.

27. *SPHYRAPICUS NUCHALIS*. Replaces the *varius* in New Mexico, the latter named species being unknown there.

28. *S. THYROIDEUS*. Found occasionally in all the mountainous portions of the country. Rather rare.

29. *MELANERPES ERYTHROCEPHALUS*. During a residence of more than six years in New Mexico, but one individual of this species was observed, in the month of July, '58, upwards of a hundred miles north of Fort Thorn, on the Rio Grande.

30. *M. FORMICIVORUS*. Found but occasionally only among the mountains, and only in the vicinity of pine trees. This species is resident throughout the year.

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31. *M. TORQUATUS*. This species confines its range to the mountainous parts of the country, and seems closely allied in its habits to *formicivorus*.

32. *COLAPTES MEXICANUS*. Replaces the *Auratus* every where south of Council Grove, Indian Territory, as my observation goes, a few miles south of the place referred to, is the farthest south I have met the *Auratus*, though it is not improbable their range may extend somewhat more southwardly.

33. *SELASPHORUS PLATYCERCUS*. Common, and the only species obtained. Found almost exclusively among the mountains.

34. *ANTROSTOMUS NUTTALLI*. Quite common everywhere.

35. *CHORDEILES HENRYII*. The most abundant species south of Albuquerque, New Mexico. In the portion of the territory where I was located, I do not think I met with any other night jar or true *Chordeiles*.

36. *MEGACERYLE ALCYON*. Not very common on the Rio Grande, but found abundantly on the Rio Gila.

37. *TYRANNUS VOCIFERANS*. The most common species observed.

38. *T. VERTICALIS*. Not uncommon.

39. *SAYORNIS NIGRICANS*. Not often met with, and principally on the Rio Mimbres.

40. *SAYORNIS SAYUS*. This species is the most familiar of its family, and delights to construct its nest under the portico of houses like our common Pewee.

41. *CONTOPUS RICHARDSONII*. Rarely seen.

42. *PYROCEPHALUS RUBINEUS*. Met with only once, on the Rio Mimbres in the summer of '53.

43. *TURDUS NANUS*. But two or three seen.

44. *PLANESTICUS MIGRATORIUS*. Rarely seen in summer, and met with most frequently during the winter in the mountains.

45. *SIALIA MEXICANA*. 46. *S. ARCTICA*.

47. *REGULUS SATRAPA*.

48. *REGULUS CALENDULA*. Both of the above two species are occasionally met with in the mountains.

49. *HYDROBATA MEXICANA*. Only met with on the Rio Mimbres.

50. *ANTHUS LUDOVICIANUS*. 51. *GEOTHLYPIS TRICHAS*.

52. *G. MACGILLIVRAYI*. One obtained on the Mimbres.

53. *ICTERIA VIRIDIS*. (Or var. *Longicauda*.)

54. *HELMINTHOPHAGA CHRYSOPTERA*.

55. *DENDROICA NIGRESCENS*. 56. *D. CANADENSIS*.

57. *D. CORONATA*. 58. *D. STRIATA*.

59. *D. OERULA*. 60. *D. ÆSTIVA*.

61. *D. STRIATA*. 62. *PYRANGA ÆSTIVA*.

63. *P. HEPATICA*. But one specimen obtained.

64. *HIRUNDO HORREORUM*.

65. *H. LUNIFRONS*. 66. *H. THALASSINA*.

67. *H. BICOLOR*. 68. *COTYLE RIPARIA*.

69. *PROGNE PURPUREA*. This latter species seems confined to the Mountains, and builds generally in hollows in pine trees.

70. *AMPELIS CEDRORUM*. 71. *PHAINOPEPLA NITENS*.

72. *MYIADESTES TOWNSENDII*. 73. *COLLYRIO LUDOVICIANUS*.

74. *VIREO GILVUS*. 75. *MINUS POLYGLOTTUS*.

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76. *OREOSCOPTES MONTANUS*.  
 77. *HARPORHYNCHUS CRISSALIS*. A few observed in the vicinity of Forts Fillmore and Thorn, on the Rio Grande. Not observed in the mountains.  
 78. *SALPINCTES OBSOLETUS*. Rather abundant during winter among the mountains.  
 79. *TELMATODYTES PALUSTRIS*. 80. *TROGLODYTES AMERICANUS*.  
 81. *CERTHIA AMERICANA*. 82. *SITTA CAROLINENSIS*.  
 83. *S. CANADENSIS*. 84. *S. PYGMEA*.  
 85. *POLIOPTILA CÆRULEA*.  
 86. *P. PLUMBEA*. Rarely observed, and only among the mountains.  
 87. *LOPHOPHANES BICOLOR*. 88. *L. WOLLWEBERI*.  
 89. *PARUS MONTANUS*. Rather common.  
 90. *PSALTRIPARUS MINIMUS*.  
 91. *P. PLUMBEUS*. Both the two last named species were occasionally met with during winter in the mountains.  
 92. *EREMOPHILA CORNUTA*. 93. *ESPERIPHONA VESPERTINA*.  
 94. *CARPODACUS CALIFORNICUS*.  
 95. *CARPODACUS FRONTALIS*. Very much more abundant than the former, which are rarely met with.  
 96. *CHRYSOMITRIS MEXICANA*. Quite common during summer among the mountains.  
 97. *C. PINUS*. Very abundant during winter, both in the river valley and in the mountains.  
 98. *RHYNCHOPHANES MACCOWNII*. 99. *POCETES GRAMINEUS*.  
 100. *COTURNICULUS PASSERINUS*. Rarely seen.  
 101. *CHONDESTES GRAMMACA*. 102. *ZONOTRICHIA GAMBELLII*.  
 103. *JUNCO DORSALIS*. Found only near Fort Stanton, among the mountains, where, I should judge, they rested. Never observed during winter. This species is an excellent songster.  
 104. *JUNCO OREGONUS*.  
 105. *POOSPIZA BELLI*. But two or three only met with.  
 106. *POOSPIZA BILINEATA*. A few met with in the summer of 1852, near Fort Fillmore, on the Rio Grande.  
 107. *SPIZELLA SOCIALIS*.  
 108. *MELOSPIZA MELODIA*. A constant resident.  
 109. *CALAMOSPIZA BICOLOR*. Quite common among the mountains in the summer months.  
 110. *GONIAPHELA MELANOCEPHALA*. 111. *GUIRACA CÆRULEA*.  
 112. *CYANOSPIZA AMER. A.* But one only ever obtained or seen—a male in full plumage,—at Fort Stanton, in the summer of 1855.  
 113. *PIPILO ARCTICUS*. 114. *PIPILO MESOLEUCUS*.  
 115. *PIPILO CHLORURA*. But one specimen obtained,—at Fort Stanton, on the Rio Bonito.  
 116. *MOLOTHRUS PECORIS*. 117. *AGELAIUS PHENICEUS*.  
 118. *XANTHOCEPHALUS ICTEROCEPHALUS*. 119. *STURNELLA NEGLECTA*.  
 120. *ICTERUS BULLOCKII*. Never observed elsewhere than in the mountains, and only during the summer months. Not common.  
 121. *SCOLECOPHAGUS CYANOCEPHALUS*. Very common along the Rio Grande during spring and autumn.

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122. *CORVUS CARNIVORUS*. 123. *CORVUS AMERICANUS*.  
 124. *PICICORVUS COLUMBIANUS*. Only met with in the mountains, and rarely  
 125. *GYMNOKITTA CYANOCEPHALA*. 126. *CYANURUS MACROLOPHUS*.  
 127. *CYANOCITTA CALIFORNICA*.  
 128. *CYANOCITTA WOODHOUSEI*. Rarely seen.  
 129. *COLUMBA FASCIATA*. 130. *ZENAIDURA CAROLINENSIS*.  
 131. *MELEAGRIS MEXICANA*. This has, of late, been proved to be a distinct species from Gallipavo, and is the common turkey of New Mexico.  
 132. *TETRAO OBSCURUS*. 133. *LOPHORTYX GAMBELLI*.  
 134. *CALLIPEPLA SQUAMATA*. 135. *CYRTONYX MASSENA*.  
 136. *GRUS CANADENSIS*. 137. *G. AMERICANUS*.  
 138. *DEMIEGRETTA PEALII*. 139. *ARDEA HERODIAS*.  
 140. *ARDETTA EXILIS*. 141. *BOTAURUS LENTIGINOSUS*.  
 142. *BUTORIDES VIRESCENS*. 143. *NYCTIARDEA GARDENI*.  
 144. *TANTALUS LOCULATOR*. 145. *FALCINELLUS ORDII*.  
 146. *OXYECHUS VOCIFERUS*.  
 147. *OX. MONTANUS*. Common on the high plains north of Fort Union, New Mexico.  
 148. *RECURVIROSTRA AMERICANA*.  
 149. *HIMANTOPUS NIGRICOLLIS*. 150. *PHALAROPUS WILSONII*.  
 151. *PHALAROPUS HYPERBOREUS*. The only occasion of my meeting with this species was in May, 1855, on the Rio Bonita, at the present site of Fort Stanton. I met a large flock in full summer plumage, and secured a number of them.  
 152. *GALLINAGO WILSONII*.  
 153. *MACRORHAMPHUS SCOLOPACEUS*. Abundant during the month of September along the valley of the Rio Grande.  
 154. *ACTODROMAS WILSONII*.  
 155. *A. BONAPARTEI*. Rather rare.  
 156. *CALIDRIS ARENARIA*. More abundant during the early autumn than the last.  
 157. *SYMPHEMIA SEMIPALMATA*. Several obtained near the Rio Mimbres, in May, 1857, the only occasion on which I ever met with this bird.  
 158. *GAMBETTA FLAVIPES*. Common in August and September.  
 159. *GAMBETTA MELANOLEUCUS*. Common along the Rio Grande in the fall and winter.  
 160. *RHYACOPHILUS SOLITARIUS*. Not common.  
 161. *TRINGOIDES MACULARIUS*. Not found during winter.  
 162. *ACTITURUS BARTRAMIUS*. A few seen during the month of August.  
 163. *NUMENIUS LONGIROSTRIS*. Frequently seen during the spring and autumn.  
 164. *PHÆOPUS HUDSONICUS*. Never met with but once,—in April, 1854, on the Rio Grande.  
 165. *RALLUS VIRGINIANUS*. One only met with, in the spring of 1856, near Fort Thorn.  
 166. *POZZANA CAROLINA*. Not uncommon in September. A few seen during the winter on the Rio Mimbres.  
 167. *FULICA AMERICANA*. 168. *CYGNUS AMERICANUS*.  
 169. *ANSER GAMBELLI*.

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170. *ANSER FRONTALIS*. May be the young of the preceding. Never but one obtained.
171. *CHEN HYPERBOREUS*. 172. *LEUCORLEPHARON CANADENSIS*.
173. *BERNICLE PARVIPES*. Much more common than the preceding; breeds in the southern portion of New Mexico, in the vicinity of Fort Thorn, and above.
174. *BERNICLE BRENTA*. Quite rarely met with.
175. *ANAS BOSCHAS*.
176. *ANAS OBSCURA*. Much rarer than the above.
177. *DUFILA ACUTA*. 178. *QUERQUEDULA DISCORS*.
179. *Q. CYANOPTERA*. 180. *SPATULA GLYPEATA*.
181. *MARECA AMERICANA*. 182. *AIX SPONSA*.
183. *FULIX MARILA*.
184. *F. COLLARIS*. Abundant in the spring.
185. *AYTHYA AMERICANA*. 186. *A. VALISNERIA*.
187. *BUCEPHALA ALBEOLA*. Much more common on the mountain brooks than on the Rio Grande, but not often met with in southern New Mexico.
188. *ERISMATURA RUBIDA*. But few ever met with.
189. *MERGUS AMERICANUS*.
190. *LOPHODYTES CUCULLATUS*. Very common on the Mimbres, and occasionally met with on the Rio Grande.
191. *CYRTOPELICANUS ERYTHORHYNCHUS*. Common above latitude 32°.
192. *GRACULUS MEXICANUS*. Very common during April.
193. *PLOTUS ANHINGA*. Not many observed.
194. *LARUS DELAWARENSIS*. A very few met with on the Rio Grande, in winter and spring.
195. *STERNA WILSONII*. Common in September on the Rio Grande.
196. *S. FULIGINOSA*. A few seen on the Rio Grande.
197. *COLYMBUS TORQUATUS*. 198. *PODYLIMBUS PODICEPS*.

Mr. J. P. Lesley was appointed to fill a vacancy in the Committee on Palæontology, and Mr. Joseph Jeanes to fill one in the Committee on the Library.

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*April 5th.*

Mr. LEA, President, in the Chair.

Forty-eight numbers present.

The following papers, by Theo. Gill, were presented for publication in the Proceedings.

On *Dactyloscopus* and *Leptoscopus*, two new genera of the family of *Uranoscopidae*.

On the genus *Callionymus* of authors.

Description of *Hyporhamphus*, a new genus of Fishes, allied to *Hemirhamphus*.

Notes on a collection of Japanese Fishes, made by Dr. J. Morrow.

And also the following:

Description of eight new species of *Unionidae*, from Georgia, Mississippi and Texas, by Isaac Lea,

And were referred to committees.